

**Attachment A**  
**Scope of Work and Budget for Cotton Creek Stream Assessment**

CONSULTANT'S Scope of Work hereunder is finite and limited to only those items explicitly stated or enumerated herein or attached hereto. Any work or services desired by OWNER that are not stated herein or attached hereto shall be considered Extra Work and shall entitle CONSULTANT to mutually agreed-upon additional compensation.

**Task 1 Royal Troon Drive to East Boundary of Craft Farms**

**Task 1 Scope:**

**Rapid Stream Assessment**

- Review of available aerial mapping, soils data, and flood mapping
- Perform field assessment of Cotton Creek from Royal Troon Drive to the eastern boundary of Craft Farms. Generally, the survey limits shall extend 5,400 linear feet along the creek and the width of the riparian zone.
- Complete Rapid Stream Assessment data forms including photo documentation detailing:
  - Reach Begin, End, and Length
  - Reach Impairment Rating
  - Specific reach instabilities by type, length, and severity
  - Riparian Zone Width, Vegetative Quality, and Canopy Cover
  - Local Watershed Erosion, Sediment Deposition
  - Habitat Availability and Degree of smothering
  - Channel Form, Alteration, and Sinuosity
  - Bank Stability and Vegetative protection
- Complete Rosgen Level III Worksheets for severity level 4 and 5 segments including Bank Erosion Hazard Index ratings.
- Develop a summary report of findings

**Task 1 Assumptions:**

- Assessment limits are based upon review of mapping provided by the client and aerial photography available at the time of project scoping.
- Assumes one Level III assessment worksheet per 1000 feet of creek.

**Task 1 Deliverables:**

- Completed Assessment Forms and Report of key findings including order of magnitude (OOM) estimates of cost for restoration/stabilization.

**Task 1 Schedule:**

- Task 1 will be scheduled upon execution of the contract.
- Assessment will commence within 2-weeks of contract execution
- Field assessment will be completed within 1 week of contract execution with a summary

report two weeks after completion of field assessment.

#### **Task 1A Costs:**

- The budget for Task 2 is **\$7,650**

#### **Task 2 East Boundary of Craft Farms to Cotton Creek Drive**

#### **Task 2 Scope:**

##### **Rapid Stream Assessment**

- Review of available aerial mapping, soils data, and flood mapping
- Perform field assessment of Cotton Creek from the East Boundary of Craft Farms to Cotton Creek Drive. Generally, the survey limits shall extend 5,700 linear feet along the creek and the width of the riparian zone.
- Complete Rapid Stream Assessment data forms including photo documentation detailing:
  - Reach Begin, End, and Length
  - Reach Impairment Rating
  - Specific reach instabilities by type, length, and severity
  - Riparian Zone Width, Vegetative Quality, and Canopy Cover
  - Local Watershed Erosion, Sediment Deposition
  - Habitat Availability and Degree of smothering
  - Channel Form, Alteration, and Sinuosity
  - Bank Stability and Vegetative protection
- Complete Rosgen Level III Worksheets for severity level 4 and 5 segments including Bank Erosion Hazard Index ratings.
- Develop a summary report of findings

#### **Task 2 Assumptions:**

- Assessment limits are based upon review of mapping provided by the client and aerial photography available at the time of project scoping.
- Assumes one Level III assessment worksheet per 1000 feet of creek.

#### **Task 2 Deliverables:**

- Completed Assessment Forms and Report of key findings including order of magnitude (OOM) estimates of cost for restoration/stabilization.

#### **Task 2 Schedule:**

- Task 2 will be scheduled upon execution of the contract.
- Assessment will commence within 2-weeks of contract execution or after completion of Task 1.
- Field assessment will be completed within 1 week of commencement a summary report two

weeks after completion of field assessment.

### **Task 2 Costs:**

- The budget for Task 2 is **\$9,500**

### **Task 3 East Boundary of Craft Farms to Cotton Creek Drive**

### **Task 3 Scope:**

#### **Rapid Stream Assessment**

- Review of available aerial mapping, soils data, and flood mapping
- Perform field assessment of Cotton Creek from the East Boundary of Craft Farms to Cotton Creek Drive. Generally, the survey limits shall extend 5,700 linear feet along the creek and the width of the riparian zone.
- Complete Rapid Stream Assessment data forms including photo documentation detailing:
  - Reach Begin, End, and Length
  - Reach Impairment Rating
  - Specific reach instabilities by type, length, and severity
  - Riparian Zone Width, Vegetative Quality, and Canopy Cover
  - Local Watershed Erosion, Sediment Deposition
  - Habitat Availability and Degree of smothering
  - Channel Form, Alteration, and Sinuosity
  - Bank Stability and Vegetative protection
- Complete Rosgen Level III Worksheets for severity level 4 and 5 segments including Bank Erosion Hazard Index ratings.
- Develop a summary report of findings

### **Task 3 Assumptions:**

- Assessment limits are based upon review of mapping provided by the client and aerial photography available at the time of project scoping.
- Assumes one Level III assessment worksheet per 1000 feet of creek.
- Section will be accessed by boat or kayak.

### **Task 3 Deliverables:**

- Completed Assessment Forms and Report of key findings including order of magnitude (OOM) estimates of cost for restoration/stabilization.

### **Task 3 Schedule:**

- Task 3 will be scheduled upon execution of the contract.
- Assessment will commence within 2-weeks of contract execution or concurrent with previous phases.
- Field assessment will be completed within 1 week of commencement with a summary report

two weeks after completion of field assessment.

**Task 2 Costs:**

- The budget for Task 2 is **\$7,000**

**ITEMS TO BE PROVIDED BY CITY OF GULF SHORES:**

The CITY will provide available mapping and GIS data including parcel data, property owners, and lidar within the project limits.

The Fee for the above services is as follows:

**SUMMARY OF COSTS & PROFESSIONAL SERVICE FEES:**

The scope of work outlined above will be performed for a total fee of **\$24,150.**

Fee Breakdown:

Task 1	\$ <u>7,650</u>
Task 2	\$ <u>9,500</u>
Task 3	\$ <u>7,000</u>
<b>Total Professional Services</b>	<b>\$ <u>24,150</u></b>

**Task 1 Royal Troon Drive to East Boundary of Craft Farms**

Preliminary Activities	Project Manger	Environmental PM	Staff Engineer Environmental	Fee Task 1
1A. Mapping review	1		2	
1B. Field Assessment (5400 LF)	1		16	
1C. Rosgen Level III Worksheets			4	
1D. Stream Assessment Report and Summary of Findings	2	2	8	
1E. Preliminary Cost Estimate (OOM)	1		2	
<b>Total Task 1</b>	<b>5 hrs</b>	<b>2 hrs</b>	<b>32 hrs</b>	<b>\$ 7,650.00</b>

**Task 2 East Boundary of Craft Farms to Cotton Creek Drive**

Preliminary Activities	Project Manger	Environmental PM	Staff Engineer Environmental	Fee Task 2
2A. Mapping review	1		2	
2B. Field Assessment (5700 LF)	1		24	
2C. Rosgen Level III Worksheets			6	
2D. Stream Assessment Report and Summary of Findings	2	2	8	
2E. Preliminary Cost Estimate (OOM)	1		2	
<b>Total Task 2</b>	<b>5 hrs</b>	<b>2 hrs</b>	<b>42 hrs</b>	<b>\$ 9,500.00</b>

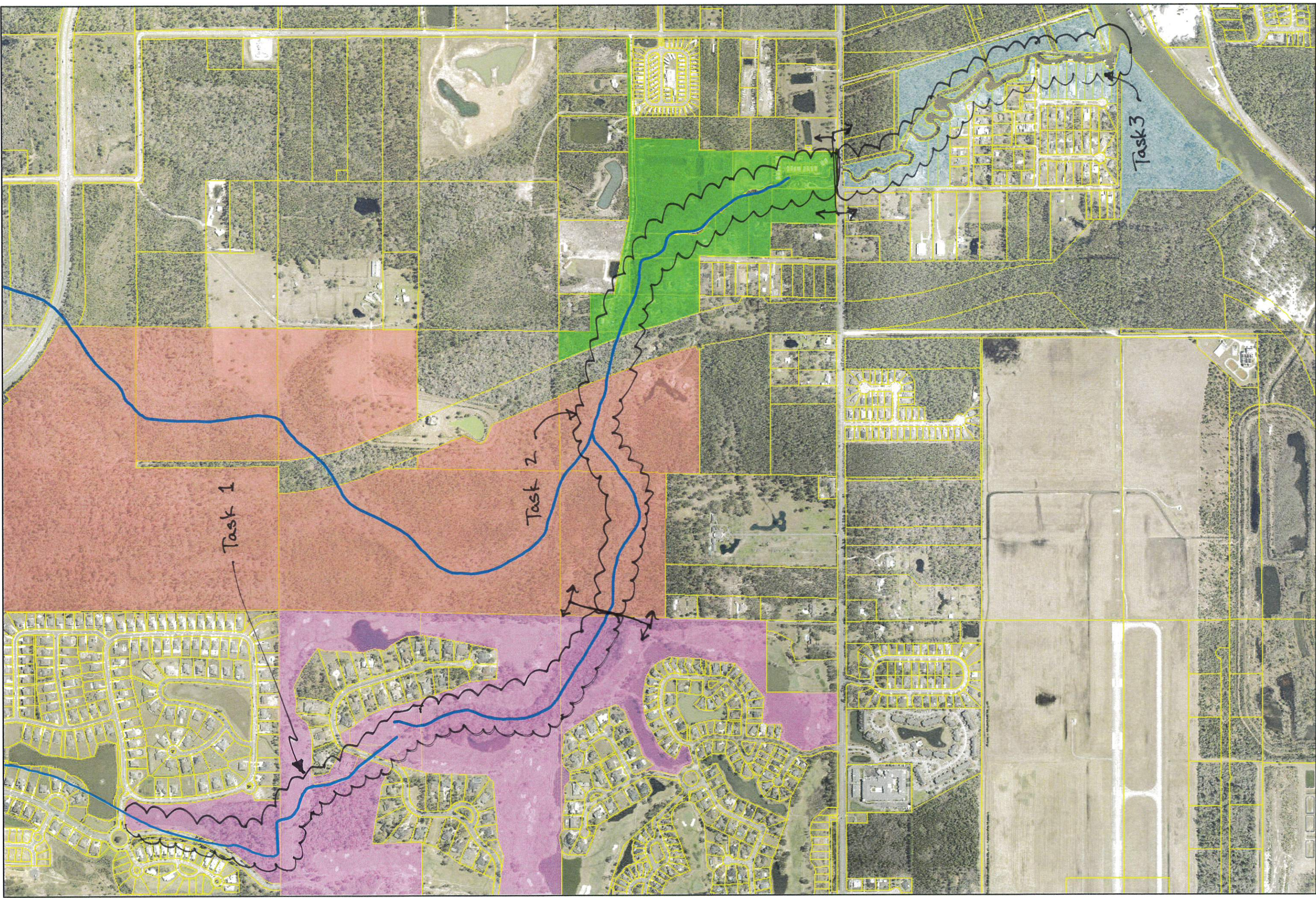
**Task 3 East Boundary of Craft Farms to Cotton Creek Drive**

Preliminary Activities	Project Manger	Environmental PM	Staff Engineer Environmental	Fee Task 3
3A. Mapping Review	1		2	
3B. Field Assessment (3800 LF)	1		12	
3C. Rosgen Level III Worksheets			4	
3D. Stream Assessment Report and Summary of Findings	2	2	8	
3E. Preliminary Cost Estimate (OOM)	1		2	
<b>Total Task 3</b>	<b>5 hrs</b>	<b>2 hrs</b>	<b>28 hrs</b>	<b>\$ 7,000.00</b>

**Total All Tasks    \$    24,150.00**

Rates			
Project Manager	Env PM	Staff 2 Engineer	Staff 1 Engineer
\$ 231.00	\$ 231.00	\$ 188.00	\$ 119.00
* Based upon Volkert 2021 hourly rates W/ Directs			





Cotton Creek - Overview  
Property Owners  
November 23, 2021

1 inch = 800 feet





## Attachment B - Field Assessment Form

## **STREAM FIELD ASSESSMENT FORM**

<b>STREAM NAME:</b>	<b>LOCATION:</b>	
<b>REACH ID:</b>	<b>RIVER BASIN:</b>	
<b>SURVEYORS:</b>		
<b>FORM COMPLETED BY:</b>	<b>DATE:</b>	<b>TIME:</b>

### **BEFORE YOU BEGIN:**

(1) Assessments should be done downstream to upstream. (2) Note any tributaries, and use consistent ID naming convention. (3) Right and left bank are determined by facing downstream. (4) All photos should be taken facing downstream with a rod or other scalable feature unless noted otherwise. (5) Photos should be taken using the Survey123 companion app to collect georeferenced photos and record notes.

### **1. GENERAL DATA COLLECTION**

<b>REACH OBSERVATIONS</b>		
<b>Reach Upstream Extent:</b>	<b>Latitude:</b>	<b>Longitude:</b>
<b>Reach Downstream Extent:</b>	<b>Latitude:</b>	<b>Longitude:</b>
<b>Reference Reach?</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<b>Predominant Channel Material:</b>		
<b>Adjacent Land Use:</b>		
<b>Approximate Reach Length:</b>		
<b>Reach Observation Notes:</b>		
<b>Reach Impairment Rating: (1 = not impaired; 5 = severely impaired)</b>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	



## INSTABILITIES

## Instability Observed?

☐ YES

□NO

**Length of Instability:**  
(approximate)

**Type of Instability:**

### Description of Instability:

## Additional Instability?

☐ YES

□NO

**Length of Instability:**  
(approximate)

**Type of Instability:**

### Description of Instability:

## Additional Instability?

☐ YES

□NO

**Length of Instability:**  
(approximate)

### Type of Instability:

### Description of Instability:

## 2. RAPID STREAM ASSESSMENT METRICS

Circle one rating for each metric. Space is provided at the bottom for total calculation.

METRIC	SCORE CRITERIA		
<b>Riparian Zone Width:</b>	Poor (0-9 m) (+0)	Moderate (9-18 m) (+2)	Good (>18 m) (+4)
<b>Riparian Vegetative Quality:</b>	Poor (0-25% Native) (+0)	Moderate (25-75% Native) (+2)	Good (>75% Native) (+4)
<b>Canopy Cover:</b>	Poor (<30%, 89-100%) (+0)	Moderate (30-50%) (+2)	Good (51-88%) (+4)
<b>Local Watershed Erosion:</b>	Heavy (+0)	Moderate (+2)	Good (+4)
<b>Sediment Deposition:</b>	Poor (>75% of bottom affected) (+0)	Moderate (25-75% of bottom affected) (+2)	Good (<25% of bottom affected) (+4)
<b>Habitat Availability:</b>	Poor (<10% stable habitat) (+0)	Moderate (10-50% stable habitat) (+2)	Good (<50% of habitat affected) (+4)
<b>Habitat Smothering:</b>	Poor (>75% of habitat affected) (+0)	Moderate (25-75% of habitat affected) (+2)	Good (<25% of habitat affected) (+4)
<b>Channel Alteration:</b>	Poor (extensive channelization evident) (+0)	Moderate (moderate channelization evident) (+2)	Good (no channelization evident) (+4)
<b>Channel Sinuosity:</b>	Poor (straight channel) (+0)	Moderate (some bends in channel) (+2)	Good (extensive bends in channel) (+4)
<b>Bank Stability:</b>	Poor (>60% of banks unstable/eroding) (+0)	Moderate (30-60% of banks unstable/eroding) (+2)	Good (<30% of banks unstable/eroding) (+4)
<b>Bank Vegetative Protection:</b>	Poor (<50% of streambank with vegetation) (+0)	Moderate (50-75% of streambank with vegetation) (+2)	Good (>75% of streambank with vegetation) (+4)
<b>Macroinvertebrates Present:</b>	Not present (+0)		Present (+2)
<b>TOTAL:</b>			



### 3. OTHER OBSERVATIONS

INVASIVE SPECIES	
Type(s) of Invasive Species: (identified to the lowest taxonomic level possible)	
Invasive Species Abundance: (estimate percentage)	
INFRASTRUCTURE	
Infrastructure Present?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Type of Infrastructure: (list any sewer crossing, utilities, unpaved roads, etc. present in the vicinity)	
OTHER	
Litter Observed?	<input type="checkbox"/> NONE <input type="checkbox"/> LOW (minimal) <input type="checkbox"/> HIGH (significant)
Storm Debris?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Adjacent Property Impacts: (list any agriculture, wastewater treatment facilities, landfills, C&D, vagrant encampment, etc.)	

**Property Owner Input:** (list any verbal input from property owner)

**Access Notes:** (list ease of access or constraints. Include any additional information concerning access)

**Constructability:** (include evaluation of project constructability)

#### ADDITIONAL OBSERVATIONS

Note any additional observations here (outfall structures, utility lines, ROWs, existing hard armoring, etc.).

Record GPS location of additional observations if available. Photos should be taken using the Survey123 companion app.

Observation	Location	Notes



Observation	Location	Notes